

Remarks

Claims 1-6, 9-15 and 17-27 are pending. Claims 7 and 8 have been canceled, while claim 9 has been amended to depend from claim 1. Claim 25 has been amended to provide for a carrier system that allows for permanent or erasable storage capabilities. Support is found on page 16, last paragraph of the Specification. No new matter has been added.

Applicants propose amending claim 9 as to dependency and to incorporate subject matter analogous to the claim 1 into claim 25. The amendments will not introduce patentable features not already considered by the Examiner. Therefore, no additional search will be required. As the amendments will further prosecution by eliminating one or more rejections, Applicants submit that good cause exists to enter the amendments even though presented after final rejection.

The Examiner objects to claims 7-9 as failing to further limit the claims from which they depend. Claims 7 and 8 have been canceled while claim 9 has been amended to depend from claim 1. Applicants submit that claim 9 is now properly dependent from claim 1.

The Examiner rejects claim 25 under 35 U.S.C. 102 as being anticipated by an article entitled "Triplet-State Cis-Trans Isomerizations of a Bisstyrylcyclooctatetraene", by Ingjald Anger et al., J. Phys. Chem. 99, 650-652 (D1). The Examiner rejects claim 25 under 35 U.S.C. 102 as being anticipated by an abstract entitled "Synthesis of New Photo- and Thermochromic Systems Based on Cyclic Double Bond Shifts in Heptalenes" El Houar et al., Chimia vol. 50, pp. 341 (7/8-1996) (D2). The Examiner rejects claim 25 under 35 U.S.C. 102 as being anticipated by an article entitled "Novel pericyclic reactions in p-perimeter chemistry", by Hafner et al., Pure Applied Chem., vol. 65(1), pp. 17-25 (1993) (D7). Applicants respectfully traverse these rejections.

The Examiner indicates that these rejections could be overcome by addition of a carrier or matrix recitation. Applicants submit that the above amendment to provide a carrier system conforms with the suggestion for overcoming the anticipation rejections in view of D1, D2 and D7.

The Examiner rejects claims 17-26 under 35 U.S.C. 102 as being anticipated by an article entitled "Synthesis and Dynamic Behavior of Chiral Heptalenes", by Klaus Hafner et al, Bull. Chem. Soc. Jpn., vol. 61, pp. 155-163 (1988) (D4). The Examiner rejects claims 17-26 under 35 U.S.C. 102 as being anticipated by an article entitled "Formation of Cyclic ortho-Anhydrides of Heptalene-1,2-dicarboxylic Acids", by Weber et al. Helvetica Chimica Acta, vol. 70, pp. 1439-1460 (1987) (D5). Applicants respectfully traverse these rejections.

Applicants wish to emphasize that the claims provide "that at least one of said substituents C<sup>1</sup> and C<sup>2</sup> contains an extended conjugated  $\pi$ -electron system which is in conjugation with the  $\pi$ -electron system of the heptalene core". In other words, the number of conjugated double bonds is at least two. Therefore, none of the cited references are novelty-destroying for claim 26 (from which claims 17-24 depend).

Neither compounds g, h, m, n, o, u and v on page 156 of "Synthesis and Dynamic Behavior of Chiral Heptalenes", by Klaus Hafner et al, Bull. Chem. Soc. Jpn., vol. 61, pp. 155-163 (1988) (D4) nor compounds 36a and 38a on page 161 of D4 fulfills said requirement. Therefore, claim 26 is novel in view of D4. Compounds 9 and 11 on page 1441 of "Formation of Cyclic ortho-Anhydrides of Heptalene-1,2-dicarboxylic Acids", by H.-J. Hansen et al. Helvetica Chimica Acta, vol. 70, pp. 1439-1460 (1987) (D5) also does not fulfill said requirement. Applicants request that the Examiner reconsider and withdraw his anticipation rejection of claims 17-26 in view of D4 and D5.

The Examiner rejects claims 1-9, 11-14 and 25 under 35 U.S.C. 103 as being unpatentable over D2 in view of U.S. Pat. No. 5,438,561 (D9). Applicants respectfully traverse this rejection.

D2 does not provide sufficient information about the synthesis of 3 and 4. Moreover, the fact that different physical properties arises from the double bond shift (UV/Vis absorption) does not provide any information as to the possibility to use 3 and 4 for data processing (cf.

page 6, last paragraph of the present application). D9 relates to a method for recording and reproducing information using an optical memory device being constituted by a transparent substrate, a recording film formed on the substrate and made of a resin containing a photochromic material dispersed therein. Specific examples of the photochromic material are diarylethene derivatives and nitrospirothiopyran. However, D9 (as well as D2) does not contain any hint that substituted [4n]annulenes can be used in a method for information storage and data processing. Hence there is no motivation to combine the references as urged by the Examiner. Applicants request that the Examiner reconsider and withdraw his obviousness rejection of claims 1-9, 11-14 and 25 in view of D2 and D9.

The Examiner rejects claims 1-9, 12 and 25 under 35 U.S.C. 103 (a) as being unpatentable over D2 in view of U.S. Pat. No. 5,432,873 (D10). D10 is cited as showing the use of photochromic compounds in optical switches. The Examiner alleges that it would be obvious to use the photochromic compounds shown in D2 in optical switches. Applicants respectfully traverse this rejection.

D10 relates to an optical switch in which a compound including a photochromic material is placed between two optical waveguides. According to D10 examples of photochromic materials are derivatives of fulgide, anthracene, azobzene, hydrazine, oxazone, diarylethene, salicylaldehyde, spiropyran, biimidazolyl and cyclophan (see D10, column 6, line 18 to 21). According to D10, column 5, line 61 to column 6, line 21 the photochromic material must meet specific conditions to be suitable for the optical switch according to D10. That is, not any photochromic material is suitable for information storage and data processing. Consequently, D10 does not teach or suggest the use of substituted [4n]annulenes in a method for information storage and data processing. D2 is distinguished for the same reasons given above. Hence there is no motivation to combine the references as urged by the Examiner. Applicants request that the Examiner reconsider and withdraw his obviousness rejection of claims 1-9, 12 and 25 in view of D2 and D10.

The Examiner rejects claims 1-15 and 25 under 35 U.S.C. 103 (a) as being unpatentable over D2 in view of D9 or D10 with an extract from "The Applications of Holography", by H.J.

Caufield et al. (D11). D11 is cited as showing that photochromic holography media are conventional or well-known. The Examiner alleges that it would be obvious to use the photochromic compounds shown in D2 in holographic media. Applicants respectfully traverse this rejection.

D11 contains a general disclosure that various recording media, including photochromic materials, have been used for holographic recording. However, no specific photochromic materials are mentioned in D11. Therefore, D11 does not teach the use of substituted [4n]annulenes in a method for information storage and data processing. D2, D9 and D10 are distinguished for the same reasons given above. Hence there is no motivation to combine the references as urged by the Examiner. Applicants request that the Examiner reconsider and withdraw his obviousness rejection of claims 1-15 and 25 in view of D2 and D11.

Applicants submit that the present application is now in condition for allowance. In the event that minor amendments will further prosecution, Applicants request that the Examiner contact the undersigned representative.

Respectfully submitted,



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